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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,301	11/10/2003	Jeffery S. Beck	10992120-4	4419

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HEWLETT-PACKARD COMPANY
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EXAMINER

NGUYEN, LAM S

ART UNIT	PAPER NUMBER
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2853

DATE MAILED: 03/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/705,301	Applicant(s) BECK ET AL.	
	Examiner LAM S. NGUYEN	Art Unit 2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 23-29 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 23-29 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/10/2003</u> | 6) <input type="checkbox"/> Other: ____ |

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DETAILED ACTION***Information Disclosure Statement***

The information disclosure statement filed 11/10/2003 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

The IDS lacks of a copy of European Search Report for Application No. EP 02 25 1655. As a result, the information referred to therein has not been considered.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 4-6, 28-29 are rejected under the judicially created doctrine of double patenting over claim 1 of U. S. Patent No. 6755495.

Claim 2 is rejected under the judicially created doctrine of double patenting over claim 2 of U. S. Patent No. 6755495.

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Claim 3 is rejected under the judicially created doctrine of double patenting over claim 3 of U. S. Patent No. 6755495.

Claim 7 is rejected under the judicially created doctrine of double patenting over claim 4 of U. S. Patent No. 6755495.

Claim 8 is rejected under the judicially created doctrine of double patenting over claim 5 of U. S. Patent No. 6755495.

Claims 9 is rejected under the judicially created doctrine of double patenting over claim 6 of U. S. Patent No. 6755495.

Claim 10 is rejected under the judicially created doctrine of double patenting over claim 7 of U. S. Patent No. 6755495.

Claim 11 is rejected under the judicially created doctrine of double patenting over claim 8 of U. S. Patent No. 6755495.

Claim 12 is rejected under the judicially created doctrine of double patenting over claim 9 of U. S. Patent No. 6755495.

Claim 13 is rejected under the judicially created doctrine of double patenting over claim 10 of U. S. Patent No. 6755495.

Claim 14 is rejected under the judicially created doctrine of double patenting over claim 11 of U. S. Patent No. 6755495.

Claims 23-26 are rejected under the judicially created doctrine of double patenting over claim 12 of U. S. Patent No. 6755495.

Claim 27 is rejected under the judicially created doctrine of double patenting over claim 13 of U. S. Patent No. 6755495.

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The above claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 3, 6-8, 13, 23, 26, 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bohorquez (US 5357081) in view of Suzuki (US 4514737).

Bohorquez discloses a fluid ejection device comprising:

an internal power supply path (*FIG. 3: The power line with the resistor R_p*);

a power regulator (*FIG. 3, element 20*) providing an offset voltage (*FIG. 3: The voltage at the positive input of element 16*);

multiple primitives (column 1, lines 50-55: Each primitive has as many as 10-13 resistors that connect to a common return), each primitive including:

a group of nozzles (*column 1, lines 25-35*);

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a corresponding group of firing resistors (*FIG. 3, element RH and column 1, lines 25-35*);

a corresponding group of switches (*FIG. 3, element 18*) controllable to couple a selected firing resistor (*FIG. 3, element RH*) of the group of firing resistors between the internal power supply path and the offset voltage to thereby permit electrical current to pass through the selected firing resistor to cause a corresponding selected nozzle to fire (*FIG. 3 and column 1, lines 25-35*).

Bohorquez does not disclose wherein the power regulator provides the offset voltage *from the internal power supply path voltage*. In other words, Bohorquez does not disclose wherein the power regulator directly connects to the internal power supply path.

Suzuki discloses a printing head driving apparatus for driving printing elements such as a coil in an impact printer (*FIG. 9-10, element 14b*) or a heating resistor in a thermal printer (*FIG. 13, element 41 and column 7, lines 25-31*). The apparatus has an internal power supply path (*FIG. 9-10, element Vcc*) and a power regulator (*FIG. 9-10, elements 29-30 or 32-33*) directly connecting to the internal power supply path *Vcc* for sensing the variation of the power supply to provide a signal for controlling the driving of printing elements in accordance to variations in the power source voltage (*FIG. 9-10: The voltage at the input of the op-amp 31*).

Therefore, it would have been obvious for one having ordinary skill in the art at the time the invention was made to modify the power regulator disclosed by Bohorquez such as the power regulator provides the offset voltage from the internal power supply path voltage or directly connects to the internal power supply path as disclosed by

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Suzuki. The motivation of doing so is to drive the printing elements in accordance to variations in the power source voltage in order to gain printing quality as taught by Suzuki (*column 2, lines 36-45*).

Bohorquez also discloses the following claimed invention:

Referring to claims 6, 26: an amplifier receiving an input offset voltage and providing the offset voltage (*FIG. 3, element 16*).

Referring to claims 3, 8: wherein each switch includes a field effect transistor (FET) (*FIG. 3: a switch element 18 comprises a transistor that is replaceable by a field effect transistor (FET) for reducing power consumed*).

Referring to claim 7: wherein the printhead further comprises:
an internal power ground (*FIG. 3: The power line with resistor RR*),
wherein each amplifier (*FIG. 3, element 16*) includes a first input (*FIG. 3: The positive input of element 16*) coupled to the input offset voltage, a second input (*FIG. 3: The negative input of element 16*) coupled to the offset voltage, and an output (*FIG. 3: The output of element 16*); and
wherein the power regulator further includes:

multiple transistors (*FIG. 3, element 18*), each transistor coupled between the internal power ground and the offset voltage and having a gate (*FIG. 3: The input of element 18*) coupled to the output of a corresponding amplifier.

2. Claims 2, 4, 5, 11-12, 24-25, 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bohorquez (US 5357081) in view of Suzuki (US 4514737), as applied to claims 1, 23, and further in view of Doluca (US 6208127).

Bohorquez, as modified, discloses the claimed invention as discussed above, except wherein the power regulator, which is a linear power regulator (**Referring to claim 2**), includes a current mode digital-to-analog converter (DAC) coupled to the internal power supply path and configured to receive a digital offset command representing a desired offset voltage from a processor to provide an analog offset voltage from the internal power supply path (**Referring to claims 4, 11-12, 24, 27**), a buffer amplifier configured to receive an analog offset voltage and to provide a buffered offset voltage (**Referring to claims 5, 25**).

Doluca discloses a power regulator such as linear regulators (*column 1, lines 12-24*) including a current mode digital-to-analog converter (DAC) (*FIG. 3-4, elements 330, 430 and column 1, lines 35-45*) configured to receive a digital offset command (*FIG. 3-4, elements 118, 302*) representing a desired offset voltage from a processor to provide an analog offset voltage (*FIG. 3-4, element 332, 432 and column 1, lines 25-35*), a buffer amplifier configured to receive an analog offset voltage and to provide a buffered offset voltage (*FIG. 4, element 450*).

Therefore, it would have been obvious for one having ordinary skill in the art at the time the invention was made to modify the power regulator in the printing system disclosed by Bohorquez, as modified, such as including the digital-to-analog converter (DAC) configured to receive a digital offset command representing a desired offset voltage to provide an analog offset voltage as disclosed by Doluca. The motivation of doing so would have been to obtain “programmable voltage regulators that are used to provide output voltages that can be set to provide the output voltage required” as taught by Doluca (*column 1, lines 25-28*).

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3. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bohorquez (US 5357081) in view of Suzuki (US 4514737) as applied to claim 13, and further in view of Otsuki (US 6145961).

Bohorquez, as modified, discloses the claimed invention as discussed above except wherein the at least one fluid ejection device includes multiple fluid ejection devices.

Otsuki discloses a fluid ejection device including multiple fluid ejection devices, wherein each ejection device ejects different color ink for color printing (*FIG. 6, elements 81-82*).

Therefore, it would have been obvious for one having ordinary skill in the art at the time the invention was made to modify the printing system disclosed by Bohorquez, as modified, such as including multiple fluid ejection devices for printing multiple colors as disclosed by Otsuki. The motivation of doing so is to provide a printing apparatus that is capable to print multiple colors as taught by Otsuki (*Abstract*).

CONTACT INFORMATION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAM S. NGUYEN whose telephone number is (571)272-2151. The examiner can normally be reached on 7:00AM - 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, STEPHEN D. MEIER can be reached on (571)272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LN
March 1, 2005



Stephen D. Meier
Primary Examiner